

AMENDMENTS TO THE CLAIMS

1. **(Currently Amended)** A perfusion cannula system for directing blood through the vasculature of a patient, comprising:

a cannula body comprising a proximal end, a distal end, and at least one lumen extending therebetween; and

a balloon located on an exterior surface of the cannula body, such that when the balloon is deployed a recess is defined between an outside surface of the balloon and an outside surface of the cannula body; and

~~means for deploying the balloon within the vasculature;~~

whereby space the recess is adapted to ~~may be provided between a vessel wall and the recess when the cannula body resides within the patient to permit blood flow past the cannula body~~ along a vessel wall when the cannula body resides in the patient.

2. **(Canceled)**

3. **(Original)** The cannula system of Claim 1, wherein the balloon comprises a first balloon and further comprising at least a second balloon spaced radially from the first balloon.

4. **(Original)** The cannula system of Claim 1, further comprising a second lumen.

5. **(Original)** The cannula system of Claim 1, wherein the deploying means comprises an inflation lumen.

6. **(Currently Amended)** A perfusion cannula system for directing blood through the vasculature of a patient, comprising:

a cannula body comprising a proximal end, a distal end, and at least one blood flow lumen extending therebetween for providing blood flow through the cannula body; and

means for creating space between an outside surface of the cannula body and a portion of the vasculature facing the space creating means to permit passive perfusion ~~blood flow through the space~~ downstream from the cannula body and external to the space creating means ~~perfusion cannula system.~~

Appl. No. : 10/735,413
Filed : December 12, 2003

7. **(Original)** The cannula system of Claim 6, wherein the space creating means is coupled with the cannula body.

8. **(Original)** The cannula system of Claim 6, wherein the space creating means is integral with the cannula body.

9. **(Original)** The cannula system of Claim 6, wherein the space creating means comprises a collapsible element.

10. **(Original)** The cannula system of Claim 6, wherein the space creating means comprises an expandable element.

11. **(Previously Presented)** A perfusion system for directing blood through the vasculature of a patient, comprising a multilumen cannula and a plurality of radially spaced balloons configured to be selectively inflated while residing within the vasculature to create at least one blood flow passage defined in part by outer surfaces of the multi-lumen cannula and at least two adjacent balloons around the multilumen cannula within the vasculature to permit blood flow through the blood flow passage past the multilumen cannula, the multilumen cannula comprising a first lumen having a first length for delivering or removing blood from the vasculature of the patient, and the multilumen cannula comprising a second lumen having a second length for delivering or removing blood from the vasculature of the patient, the first length being greater than the second length.

12. **(Original)** The perfusion system of Claim 11, wherein the balloons are integrally formed with the cannula.

13. **(Original)** The perfusion system of Claim 11, wherein the cannula comprises inflation lumens.

14-19. **(Canceled)**

Appl. No. : 10/735,413
Filed : December 12, 2003

20. **(Currently Amended)** A perfusion cannula system comprising:

a cannula body comprising a proximal end, a distal end, a means for providing blood flow to the vasculature of a patient, and a means for enhancing blood flow past the cannula when the cannula body resides within the patient by creating a blood flow passage defined by an exterior surface of the ~~cannula body~~ blood flow enhancing means and a vessel wall.

21. **(Original)** The cannula system of Claim 20, wherein the enhancing means is capable of selectively enhancing blood flow past the cannula.

22. **(Original)** The cannula system of Claim 20, wherein the enhancing means comprises at least one balloon.

23-40. **(Canceled)**

41. **(Previously Presented)** The cannula system of Claim 1, wherein the balloon has a generally circular cross-section.

42-45. **(Canceled)**

46. **(New)** The perfusion cannula system of Claim 1, further comprising means for deploying the balloon within the vasculature.